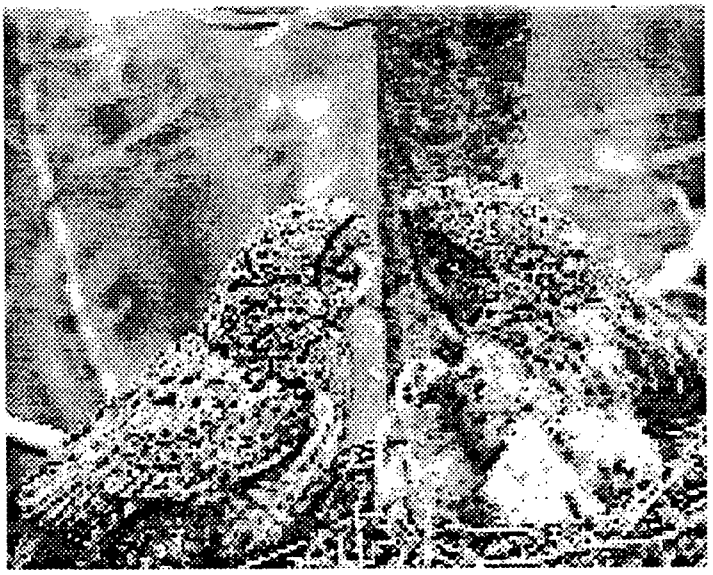
Environmental Restoration Program



Monthly Report for August 1993

Rocky Flats Office

August 20, 1993

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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR AUGUST 1993

Work on the Operable Unit (OU) 1 Remedial Investigation (RI) report is proceeding. Several sections of the report were reviewed: Section 4, *Nature and Extent of Contaminants*; Section 5, *Fate and Transport of Contaminants*; and Section 6, *Ecological Risk Assessment and Human Health Risk Assessment* (HHRA). The Environmental Evaluation (EE) and Human Health Risk Assessment sections of the report were completed and are undergoing document production.

Work continues towards completion of the OU 2 bedrock investigation. Demobilization of the field program is continuing along with slug testing for the remaining wells. Development of the B-series well is taking longer than projected. Slug testing for the remaining three wells will occur when the B-series well is developed. Hydrogeologic testing target completion is September 1, 1993.

Environmental Protection Agency (EPA) sent a letter to the Department of Energy (DOE) on August 11, 1993, approving the schedule extension request for OU 3. The extension dates for the Draft and Final Resource Conservation and Recovery Act (RCRA) Facility Investigation (FI)/Remedial Investigation (RI) Reports are February 14, 1994, and October 21, 1994.

The draft streamlined Interim Measure/Interim Remedial Action (IM/IRA) closure schedule for the accelerated pond sludge removal schedule continues to be developed in support of the dispute resolution on the OU 4 Phase I RFI/RI Reports. The project remains on schedule for finalizing the clean-out plan by September 7, 1993. Preparation of the Design Criteria Package for accelerated pond sludge removal also continues.

The EPA approved a 10-month extension of the OU 6 Draft Phase I RFI/RI Report from August 4, 1993, to June 10, 1994, and the Final Phase I RFI/RI Report from January 7, 1994, to November 18, 1994. Approval from EPA was received on August 16, 1993. Approval from DOE of EPA's extension is pending.

The DOE Rocky Flats Office (RFO) is responding to a request from DOE Headquarters (HQ) to ensure that the enforceable compliance and cleanup agreements established by the Office of Environmental Restoration and Waste Management (EM) reflect changes in the Department's mission and ensure that the best technical activities, priorities, and schedules are implemented. This effort will require close consultation with the regulatory agencies, and any proposed modifications to agreements would have to be approved by the regulatory agencies using the procedures established in the enforceable agreements. DOE/RFO is in the process of compiling the necessary agreement milestone information for submittal to DOE/HQ in September 1993.

Industrial Area Interim Measure/Iterim Remedial Action Plan (IA/IM/IRAP) - Phase II Geologic Characterization Data Acquisition - The acquisition phase of the Deep Seismic Program was completed on August 24, 1993. A gravity and magnetics survey is being conducted along the western portion of the seismic line by the Colorado School of Mines. The Statement of Work (SOW) was completed, reviewed, and delivered to EG&G Procurement. The regulatory agencies have given approval to the scope and schedule.

Integrated Operable Units - OUs 8, 9, 10, 12, 13 and 14 - The subcontract for implementation of the nonintrusive field work for the Industiral Area (IA) OUs 8, 9, 10, 12, 13, 14 was awarded by EG&G Procurement on August 13, 1993. The High Purity Germanium (HPGe) Unit completed work on OU 13, OU 14, and part of OU 8 in August 1993. The final Health and Safety Plan (HSP) for implementation of nonintrusive field work for the IA OUs is being modified to include radiological operating procedures.

IAG Performance Indicators for ER Monthly Report

Number of IAG Milestones to Date	Current FY93 (10/1/92 - 9/30/93)	Since IAG Signed (1/22/91)
Scheduled (including approved extensions)	15	91
Met	11	67
Extensions Granted	7	22
Extensions Denied	2	2
In Dispute - OU 4 Phase I Draft/Final Report	1	1
Remaining this FY93 (to 9/30/93)	3	n/a

Deliverable in Review by Regulators	Project	Date Submitted
	OU 14 Final Phase I RFI/RI Work Plan	19 Oct 92

Field Work Currently Underway	Project	Scheduled Complete
	OU 2	23 Aug 93
	OU 3	13 Jul 93
	OU 4	Jan 96*
	OU 5	15 Jul 93
	OU 7	30 Apr 93
	OU 10	20 Jul 94

*for all field work phases

IM/IRA Status	Gallons Treated
OU 1 881 Hillside Treatment	1,537,963
OU 2 903 Pad Water Treatment	17,402,740
OU 4 Water Management Tasks	Project is in operations phase

IAG Document Deliverables Due Next 6 months	Due Date	Expected Date
OU 1 Final Phase III RFI/RI Report	04 Jan 93	15 Nov 93
OU 1 Draft Proposed Plan	27 Sep 93	30 Sep 94
OU 1 Final Proposed Plan	04 Jan 94	17 May 95
OU 2 Final Treatability Test Report (RRS)	08 Sep 93	08 Sep 93
OU 2 Draft CMS/FS Report	04 Nov 93	30 Oct 96
OU 4 Draft Phase I RFI/RI Report	21 May 93	15 Apr 94
OU 5 Draft Phase I RFI/RI Report	30 Nov 93	09 Feb 95
OU 6 Final Phase I RFI/RI Report	07 Jan 94	10 Jul 98
OU 7 Draft Phase I RFI/RI Report	12 Oct 93	20 Dec 93

Overdue Deliverables	Due Date	Expected Date
OU 2 Draft RFI/RI Report	12 Mar 93	16 Dec 93*
OU 2 Final Phase II RFI/RI Report	09 Aug 93	23 May 94*
OU 6 Draft Phase I RFI/RI Report	04 Aug 93	11 Jul 94

*TBD because of HHRA issues work stoppage.

PROBLEMS AND PROGRAMMATIC ISSUES

Procurement Status

Procurement has been interfacing with RFO's upper management in addressing DOE's request for implementation of Section 3161 of the National Defense Authorization Act. Based on this request, Procurement facilitated the gathering of data for justification of Environmental Restoration/Environmental Protection (ER/EP) compliance to Section 3161 and submitted this report to the EG&G Assistant General Manager (AGM) for Administration and Planning.

Parallel to this exercise was a request by the Deputy AGM to the General Manager for a response from EP/ER on plans for the reduction in subcontractors to support workforce restructuring. Procurement initiated the collecting of data and condensing into report form the justification for utilization of subcontractors within EP/ER. This report was then presented for evaluation to upper managerment.

Other

The regulatory agencies agreed with the need to stop work on the following portions of the baseline Human Health Risk Assessments (HHRA) for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.

2. Selection of the contaminants of concern for both ecological and baseline HHRA.

3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports. Work stopped for OUs 1, 2, and 7 as of June 21, 1993; for OUs 4, 5, and 6 as of August 12, 1993; and for OU 3 as of July 23, 1993.

An incorrect valve was left open during the discharge of Tank 206 in OU 1, which resulted in approximately 60,000 gallons of treated effluent water from Tank 207 being released into the South Interceptor Ditch (SID) without verification of laboratory analysis. Based on historical data obtained on effluent tanks, it is expected that this water will have no adverse impacts to the environment. Corrective actions to prevent a similar occurrence were taken.

The scheduled start date for the OU 2 Soil Vapor Extraction Pilot Test at Site 1 is projected to be missed. An expedited schedule was constructed to minimize schedule slippage.

A milestone extension was requested on the OU 12 Draft RFI/RI Report due on April 20, 1994, and the Final RFI/RI Report due on September 15, 1994. The extension is being requested because of field work activities being postponed as a result of funding limitations in fiscal year (FY) 93 and the coordination of Individual Hazardous Substance Sites (IHSS) cleanup with the RFP Decontamination and Decommissioning (D&D)/Transition Planning, which was included in the FY95-99 Five-Year Plan (FYP) submittal.

NEAR-TERM IAG MILESTONES

OU	Milestone Description	Due to EPA/CDH	Status
2[a]	Submit Draft Phase II RFI/RI Report	12 Mar 93	Extension denied/delinquent
4[a]	Submit Draft Phase I RFI/RI Report	21 May 93	Extension to 14 Sep 93 (in dispute)
2	Submit Subsurface Test Plan Site #2	24 Jun 93	Complete
2	Submit Final Treatability Test Report	13 Jul 93	Extension to 8 Sep 93
3[a]	Submit Draft Phase I RFI/RI Report	16 Jul 93	Extension to 14 Feb 94
6[a]	Submit Draft Phase I RFI/RI Report	4 Aug 93	Extension request submitted
2[a]	Submit Final Phase II RFI/RI Report	9 Aug 93	Extension denied/delinquent
7[a]	Submit Draft Phase I RFI/RI Report	12 Oct 93	*
4[a]	Submit Final Phase I RFI/RI Report	18 Oct 93	Extension to 14 Feb 94 (in dispute)
2	Submit Draft CMS/FS Report	04 Nov 93	*
1[a]	Submit Final Phase III RFI/RI Report	04 Jan 93	Extension to 15 Nov 93
5[a]	Submit Draft Phase I RFI/RI Report	30 Nov 93	*
3[a]	Submit Final Phase I RFI/RI Report	13 Dec 93	Extension to 21 Oct 94
1	Submit Draft Proposed Plan	27 Sep 93	Extension request submitted
1	Submit Final Proposed Plan	04 Jan 94	Extension request submitted
6[a]	Submit Final Phase I RFI/RI Report	07 Jan 94	Extension request submitted
1	Submit Draft CMS/FS Report	31 Mar 94	Extension to 11 Feb 94
8	Submit Draft Phase I RFI/RI Report	14 Feb 94	*
7[a]	Submit Final Phase I RFI/RI Report	16 Mar 94	*
9	Submit Draft Phase I RFI/RI Report	11 Apr 94	
4	Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94	*
12	Submit Draft Phase I RFI/RI Report	20 Apr 94	Extension request submitted
4	Submit Draft Phase II Work Plan	22 Apr 94	*
5[a]	Submit Final Phase I RFI/RI Report	03 May 94	*
1	Submit Draft Responsiveness Summary	06 May 94	*
2	Submit Final CMS/FS Report	10 May 94	*
2	Submit Draft Proposed Plan	10 May 94	
8	Submit Final Phase I RFI/RI Report	12 Jul 94	*
15	Submit Draft Phase I RFI/RI Report	01 Aug 94	On schedule
1	Submit Final CMS/FS Report	03 Aug 94	*
1	Submit Final Responsiveness Summary	03 Aug 94	*
1	Submit Draft CAD/ROD	03 Aug 94	*
13	Submit Draft Phase I RFI/RI Report	08 Aug 94	*
2	Submit Final Proposed Plan	09 Aug 94	*
10	Submit Draft Phase I RFI/RI Report	25 Aug 94	*
9	Submit Final Phase I RFI/RI Report	06 Sep 94	*
4	Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94	*
7	Submit Draft Phase II RFI/RI Work Plan	13 Sep 94	*
12	Submit Final Phase I RFI/RI Report	15 Sep 94	Extension request submitted
4	Submit Final Phase II RFI/RI Work Plan	19 Sep 94	*
11	Submit Draft Phase I RFI/RI Report	20 Sep 94	*

*Behind original IAG schedule; extension required.

a. OU 1 through OU 7 may require additional extensions because of HHRA issues work stoppage.

SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for August 1993. This program implements the Interagency Agreement (IAG) among the U.S. Department of Energy, the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Plant in Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

Section 2.1 of this report highlights significant achievements and summarizes the milestones completed during July 1993. Section 2.2 presents any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU) as well as other program activities are presented in Section 3. Section 4 contains the schedules for routine environmental sampling as required by Paragraph 210 of the Interagency Agreement. Section 5 contains a list that identifies the contractors and subcontractors performing work on the program as required by Paragraph 13 of the IAG.

SECTION 2. PROJECT STATUS

2.1 OU 1 - 881 HILLSIDE AREA

The alluvial ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of RFP, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately 2 miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSS) that make up OU 1 were being investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface ground water flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and released onsite into the South Interceptor Ditch (SID) along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. The Remedial Investigation and Feasibility Study (RI/FS) to determine the final remedial action are continuing in parallel with operation of the IRA.

2.1.1 OU 1 ASSESSMENT

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Submit Final Phase III RFI/RI Work Plan	31 Oct 90
Submit Draft Phase III RFI/RI Report	28 Oct 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Final Phase III RFI/RI Report	04 Jan 93	15 Nov 93	15 Nov 93*
Submit Draft CMS/FS Report	31 Mar 93	11 Feb 94	31 Mar 94
Submit Final CMS/FS Report	27 Sep 93	03 Aug 94	30 Sep 94
Submit Draft PP	27 Sep 93		30 Sep 94
Submit Final PP	04 Jan 94		17 May 95
Submit Draft Responsiveness Summary	06 May 94		02 Nov 95
Submit Final Responsiveness Summary	03 Aug 94		12 Apr 96
Submit Draft CAD/ROD	03 Aug 94		12 Apr 96

*TBD because of HHRA issues work stoppage.

August Work Activity Status

Remedial Investigation (RI) - Work on the RI report is proceeding on schedule. Several sections of the report were reviewed: Section 4, *Nature and Extent of Contaminants*, Section 5, *Fate and Transport of Contaminants*, and Section 6, *Ecological Risk Assessment and Human Health Risk Assessment* (HHRA). The Environmental Evaluation (EE) and Human Health Risk Assessment sections of the report were completed and are undergoing document production.

The regulatory agencies agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.

2. Selection of the contaminants of concern for both ecological and baseline HHRA.

3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports. Work stopped for OUs 1 as of June 21, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological affects assessment will proceed as scheduled.

Revisions to the Interim Measures/Interim Remedial Action (IM/IRA) Quarterly Report are underway.

DOE comments were incorporated into the Wetlands Status Report, which was delivered on August 30, 1993, to EPA.

Modifications to two contracts are underway. The protracted discussions with the regulatory agencies over the contaminant methodology resulted in portions of work being redone, and other portions stalled. EG&G Procurement is working to modify the contract for the EE work. The RI report modification was awarded. The proposal for the EE modification was received and the technical evaluation is underway.

Feasibility Study/Corrective Measures Study (FS/CMS) - Work on the FS is in progress. Technical Memorandum (TM) #10, *Preliminary Remediation Goals*, was received by DOE on August 15, 1993. The revised initial screening of technologies and process options is being reviewed. Work is progressing towards the October 1993 delivery date on TM #11, *Alternatives Array*.

Technical Memoranda

Project:	**OU 1 - 881 Hillside**
TM #10	
TM Title	Preliminary Remediation Goals
TM Status	Submitted draft TM to DOE in February 1993. DOE comments were completed for Appendix A of TM #10 in May 1993. When preparation is concluded or estimated to be concluded: 08/15/93 Projected date of submittal to EPA/CDH: 09/03/93 Actual date of submittal: N/A Date when comments received: N/A
TM #11	
TM Title	Alternative Array
TM Status	Submitted draft TM to DOE: 10/21/93 When preparation is concluded or estimated to be concluded: 10/20/93 Projected date of submittal to EPA/CDH: 11/15/93 Actual date of submittal: N/A Date when comments received: N/A
Planned Work for September	• Continue work on TM #11. • Continue revisions on IM/IRA Quarterly Report. • Complete EG&G review of Phase II RI Report.
Problems	A stop work order on portions of the baseline HHRA was received June 21, 1993. All downstream milestones associated with the baseline HHRA will be delayed.
Open Items	Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports.

2.1.2 OU 1 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91
Complete IM/IRA Construction (891 treatment building)	02 Mar 92
Complete IM/IRA Construction (French drain)	13 Apr 92

Future IAG Milestones Through FY94

None

August Work Activity Status

Tank 205 was resampled for Volatile Organic Compounds (VOCs) and dissolved iron to verify the quality of water for possible discharge. Tank 205 showed that the iron result was still above Applicable or Relevant and Appropriate Requirements (ARAR). The water from effluent Tank 205 is being retreated through the ion exchange (IX) system to bring down the levels of iron in the water. A total of 55,000 gallons was retreated the week ending August 27, 1993. This makes a total of 70,000 gallons of retreatment for Tank 205. Approximately 15,000 gallons of additional retreatment will be performed before the tank is resampled.

Water remains in Tank 206 for discharge into the wetland, if needed. Approximately 19,491 gallons of French drain water was treated in order to maintain some influent storage capacity.

Revisions to the Second Quarterly Report for FY93 are nearly complete.

The automatic nitrogen fill system for the gamma analyzer was installed.

French drain sump pump, P-102, was inoperable earlier in the month but is now functional. The automatic position on the French drain pumps still does not work; however, the transducers were identified as the problem. New transducers will be installed. Also, the compressor on the French drain level indicator became inoperable and was replaced.

Problems relating back to the lightning strike in mid-July 1993 remain unsolved. Leak detection alarms that were set off by the lightning are still malfunctioning. It was discovered that the counter that monitors the pump time for the recovery well on the 881 Hillside has been counting abnormally long run times. The computer identified the first instance of this problem at the same time as the occurrence of the lightning strike. Investigations are being conducted to identify the problem. Currently, the well level is being monitored, and the pump will be run in the manual mode, if needed.

On August 26, 1993, approximately 60,000 gallons of treated effluent water from Tank 207 was released into the South Interceptor Ditch (SID) without verification of laboratory analysis. This incident occurred during the discharge of Tank 206. An incorrect valve was left open, which resulted in the discharge of Tank 207, as well as Tank 206. Based on historical data obtained on effluent tanks, it is expected that this water will have no adverse impacts to the environment. Laboratory results indicate that no VOC contamination was present in the water. Metals and water quality results will be received by September 2, 1993. Radiochemistry results will follow on September 9, 1993.

The following actions were taken as a result of this unplanned release : (1) Operations at OU 1 were shutdown for 1 week; and (2) the subcontractor completed Standard Operating Procedures (SOPs) for basic operations before resuming operations. Collection of water continued in order to stay in compliance with the Interim Remedial Action Plan (IRAP).

Treated ground water this month:	19,491 gallons
Total treated to date:	1,537,963 gallons

Planned Work for September

- Continue routine water treatment operations.
- Continue work on lightning strike problems.
- Contiue revisions on second Quarterly Report.

Problems

Problems relating back to the lightning strike in mid-July 1993 remain unsolved. The leak detection system on the influent piping is still not functioning correctly, and the counter on the 881 Hillside pump is not counting correctly. Investigations are being conducted to correct these problems.

An incorrect valve was left open during the discharge of Tank 206, which resulted in the unplanned release of approximately 60,000 gallons of treated effluent water from Tank 207 into the SID without verification of laboratory analysis.

Open Items

None

2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent; some may have contaminants that were not removed by the treatment system.

An IM/IRA provides for surface water in source areas of contamination to be collected, treated, and discharged to the surface water drainage. Operation of a field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process will be evaluated at three locations: the entrance to the treatment facility, several points within the facility, and the discharge point. After completion of the field-scale treatability tests, the unit is anticipated to remain in service until the final remedial action is operational. The RI/FS are continuing in parallel with the IRA.

A second IM/IRA was established in late-1991. This Subsurface Investigation Interim Measure/ Interim Remedial Action Plan/Environmental Assessment (IM/IRAP/EA) is north of Woman Creek and encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRAP/EA identifies and evaluates interim remedial actions for removal of residual free-phase VOC contamination from three distinct subsurface environments at OU 2. Each of the VOC-removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The interim remedial actions for the collection of information will aid in the selection and design of final remedial actions that address subsurface, residual free-phase VOC contamination at OU 2.

2.2.1 OU 2 ASSESSMENT

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase II RFI/RI Report	12 Mar 93	Denied	16 Dec 93*
Submit Final Phase II RFI/RI Report	09 Aug 93	Denied	23 May 94*
Submit Draft CMS/FS Report	04 Nov 93		17 Oct 96
Submit Final CMS/FS Report	10 May 94		26 Jun 97
Submit Draft PP	10 May 94		26 Jun 97
Submit Final PP	09 Aug 94		13 Jan 98

*TBD because of HHRA issues work stoppage.

August Work Activity Status

The second draft of TM #9, *Chemicals of Concern*, was received by DOE on August 25, 1993. This TM replaced an earlier version that was missing data.

Work continues towards completion of OU 2 bedrock investigation. Demobilization of the field program is continuing along with slug testing for the remaining wells. Development of the B-series well is taking longer than projected. Slug testing for the remaining three wells will occur when the B-series well is developed. Hydrogeologic testing target completion is September 15, 1993.

A meeting was held August 6, 1993, to discuss posting requirements for the americium zone. A purchase requisition and Statement of Work (SOW) have been generated, the Integrated Work Control Program (IWCP), the excavation permit, and land use permit have been started. Work towards fencing the americium zone is being delayed until a Davis Bacon Act determination is made. This determination may take up to 6 weeks.

The regulatory agencies agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.

2. Selection of the contaminants of concern for both ecological and baseline HHRA.

3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports. Work stopped for OU 2 as of June 21, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological affects assessment will proceed as scheduled.

EG&G Ecology and NEPA (National Environmental Policy Act) Division (END) was contacted concerning the revised amounts of soil to be excavated for OU 2. Revised volumes were generated based on the continuing data collection and evaluation for the OU 2 Draft Phase II RFI/RI Report.

Technical Memoranda

Project:	OU 2 - 903 Pad, Mound, and East Trenches
TM #5	
TM Title	Exposure
TM Status	When preparation concluded or estimated to be concluded: 01/15/93 Projected date of submittal to EPA/CDH: 01/15/93 Actual date of submittal: 01/15/93 Date when comments received: 02/11/93 EPA, 03/12/93 CDH
TM #6	
TM Title	Modeling
TM Status	When preparation concluded or estimated to be concluded: 01/15/93 Projected date of submittal to EPA/CDH: 01/15/93 Actual date of submittal: 01/15/93 Date when comments received: 04/1/93 EPA, 03/31/93 CDH
TM #7	
TM Title	Surficial Soils
TM Status	When preparation concluded or estimated to be concluded: 01/7/93 Projected date of submittal to EPA/CDH: 01/7/93 Actual date of submittal: 01/12/93 Date when comments received: 01/21/93 Approved
TM #8	
TM Title	Bedrock
TM Status	When preparation concluded or estimated to be concluded: 03/15/93 Projected date of submittal to EPA/CDH: 03/1/93 Actual date of submittal: 03/15/93 Date when comments received: 04/14/93 EPA, 04/14/93 CDH
TM #8 Addendum	
TM Title	Contingency Plan for Revised Phase II RFI/RI Work Plan (Bedrock)
TM Status	When preparation concluded or estimated to be concluded: Projected date of submittal to EPA/CDH: None Actual date of submittal: Date when comments received:

TM #9
TM Title — Chemicals of Concern
TM Status — When preparation concluded or estimate to be concluded: 08/24/93
Projected date of submittal to EPA/CDH: Unknown because of work stoppage
Actual date of submittal:
Date when comments are received:

TM #10
TM Title — Toxicity Assessment
TM Status — When preparation concluded or estimated to be concluded: 08/24/93
Projected date of submittal to EPA/CDH: Unknown because of work stoppage
Actual date of submittal:
Date when comments are received:

Planned Work for September

- Prepare an assessment of the stop work impact on the OU 2 project.
- Continue demobilization of the field work.
- Continue preparation of the non-risk sections of the Draft Phase II RFI/RI Report.

Problems

A stop work order on portions of the baseline HHRA was received June 21, 1993. All downstream milestones associated with the baseline HHRA will be delayed.

Open Items

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports.

2.2.2 OU 2 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	13 May 91
Submit Draft Treatability Test Report (Phase I GAC)	01 Apr 92
Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92
Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
Submit Final Treatability Test Report (Phase I GAC)	02 Jun 92
Submit Subsurface Site I Draft Test Plan	29 Oct 92
Submit Subsurface Site I Final Test Plan	12 Jan 93
Submit Subsurface Site II Draft Test Report	24 Jun 93
Submit Draft Surface Water Field Treatability Report	13 Jul 93

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase II Treatability Study Report	18 May 93	13 Jul 93	13 Jul 93
Submit Final Phase II Treatability Study Report	13 Jul 93	08 Sep 93	08 Sep 93

August Work Activity Status

Subsurface IM/IRA Program - Seven 55-gallon drums of sludge from the Field Treatability Unit (FTU) were packaged this month.

A new procedure was initiated to analytically measure the percentage of solids in the concentration tank. This will allow the system to be operated more precisely.

A rigorous preventive maintenance program was implemented to ensure proper maintenance, calibration, and performance of all equipment.

The Quarterly Operations Report for the OU 2 FTU was submitted on August 2, 1993.

A request is being made to reduce sampling at the OU 2 FTU. Because most of this sampling was performed in the past to provide data for the OU 2 Treatability Study Report (draft submitted on July 13, 1993), there is no need to continue the intense and costly sampling. Sampling can be curtailed to a bare minimum, while still maintaining control over the system performance and remaining in compliance with the IRAP for the OU 2 FTU. Since the weekly sample taken at the effluent of the lead Granular Activitated Carbon (GAC) unit is used to monitor the performance of the GAC, monitoring is still required at this location. Onsite gas-chromatograph equipment will be substituted for the costly offsite samples that are currently being taken. This will eliminate 52 VOC samples per year.

Waste minimization is a crucial issue for the DOE. Simple changes were proposed by the subcontractor to the FTU that would reduce the amount of sludge by 40 to 50 percent and eliminate roughly 80 to 90 55-gallon mixed waste drums per year from the FTU. The proposed changes would reduce the amount of calcium hydroxide (lime) by 50 percent (lime currently accounts for 88 percent of the sludge volume), thus significantly reducing sludge generation. In order to keep the pH in the tank that the lime is injected into within specifications, small amounts of caustic would be injected through a metering pump. It is estimated that the costs for implementing this change would be less than $1,000 and take less than 1 week (including testing) to implement. This method is currently used in several other systems similar to the one located at OU 2.

The scheduled start date for the Soil Vapor Extraction Pilot Test at Site 1 is projected to be missed. An expedited schedule has been constructed to minimize schedule slippage. EG&G delivered to DOE on August 25, 1993, the expedited schedule and the reasons for the need to slip the schedule.

Drilling for installation of the vapor extraction and air injection wells began on August 9, 1993.

The Health and Safety Plan (HSP) was finalized. Excavation, land use, and radiation work field permits was acquired. The IWCP was finalized August 11, 1993.

DOE reviewed and comments were incorporated into the draft IM/IRA Implementation and Operations Plan for the Soil Vapor Extraction Pilot Test.

Shop operational testing of the Mobil Soil Vapor Extraction Unit (MSVEU) has started. The MSVEU was accepted by RFP on August 3, 1993.

Surface Water IM/IRA Program - A meeting was held on August 20, 1993, with the regulatory agencies to discuss the results of the Surface Water IM/IRA Treatability Study Report (TSR). The focus of this meeting was to discuss removing two surface water sources (SW-61 and SW-132) from collection and treatment. Surface water contamination at these two sites for analytes with ARARs was not significant. The regulatory agencies indicated that they will consider permitting discontinuation of treatment for these stations. There will be no action on finalizing the Draft OU 2 Surface Water IM/IRAP Treatability Study Report until comments are received from the regulatory agencies.

Surface water station SW-59 is significantly contaminated with respect to ARARs and discontinuation of treatment for this source was not requested. However, there is very low risk to human health associated with that source. Alternative methods of treating SW-59 will be considered either in the TSR or in a separate document.

The treatment unit effectiveness was also discussed. The current design results in loss of the volatile organics in the process stream prior to the GAC units. The current sampling system does not identify exactly where the volatile organics are lost. In addition, sampling location RS-1 has not been consistently sampled. The methodology for sampling at RS-1 (initial, pre-process sampling point) is being investigated. Changes will be made to the Field Sampling Plan (FSP) and/or sample locations based on the outcome of this investigation. The regulatory agencies will be notified if the new sampling method results in a change in the conclusions of the TSR.

Treated surface water this month:	302,740 gallons
Total treated water:	17,402,740 gallons

Planned Work for September

Subsurface IRA Program

- Continue efforts to procure a subcontract for the detailed soil vapor survey (SVS).
- Continue treating water at the OU 2 FTU.

Surface IRA Program

- Secure comments from the regulatory agencies on the Draft Surface Water IM/IRAP Treatability Study Report, address comments, and finalize report.

Problems

The scheduled start date for the Soil Vapor Extraction Pilot Test at Site 1 is projected to be missed. An expedited schedule has been constructed to minimize schedule slippage. EG&G delivered to DOE on August 25, 1993, the expedited schedule and the reasons for the need to slip the schedule.

Open Items

None

2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Past Remedy Report	26 Oct 90
Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
Submit Final Past Remedy Report	02 Apr 91
Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
Submit Final Phase I RFI/RI Work Plan	06 Dec 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	16 Jul 93	Pending	02 Nov 93*
Submit Final Phase I RFI/RI Report	13 Dec 93	Pending	20 Jul 94*

*TBD because of HHRA issue work stoppage.

August Work Activity Status

Offsite landowners will be informed of the laboratory analysis results of soil samples obtained from their property. A letter conveying this information is being reviewed by DOE prior to its release to the landowners.

The Technical Evaluation on the Settlement Agreement weed control subcontract was sent to EG&G Procurement on August 23, 1993. This subcontract will provide weed control actions on the Jefferson County Settlement Agreement property as required under this legal action.

The summer biannual report to Jefferson County was prepared. This report identifies activities related to the Jefferson county Remedy Acres as required by the 1985 McKay versus U.S. et al. Settlement Agreement.

The regulatory agencies agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.

2. Selection of the contaminants of concern for both ecological and baseline HHRA.

3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports. Work stopped for OU 3 as of July 23, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological affects assessment will proceed as scheduled.

DOE received a letter from EPA on August 11, 1993, approving the schedule extension request for OU 3. The extension dates for the Draft and Final RFI/RI Reports are February 14, 1994, and October 21, 1994. The extension will allow the EPA the time to review the information on access permits required for offsite sampling. The difficulty in obtaining the access permits is a significant factor in requesting the schedule extensions.

The Area of Concern (AOC) document was revised based on comments from the regulatory agency. This AOC document was delivered to the regulatory agencies on July 30, 1993. Approval is expected following the second submittal of this document. No specific schedule is attached to this document.

Technical Memoranda

Project	OU 3 - Offsite Areas
TM #1	
TM Title	Field Changes to RFI/RI Work Plan
TM Status	When preparation concluded or estimated to be concluded: 05/10/93 Projected date of submittal to EPA/CDH: 05/10/93 Actual date of submittal: 05/10/93 Date when comments received: No comments expected
TM #2	
TM Title	Exposure Scenarios for the HHRA
TM Status	When preparation concluded or estimated to be concluded: 05/12/93 Projected date of submittal to EPA/CDH: 05/12/93 Actual date of submittal: 05/03/93 Date when comments received: 07/15/93
TM #3	
TM Title	Modeling
TM Status	When preparation concluded or estimated to be concluded: 09/29/93 Projected date of submittal to EPA/CDH: 09/29/93 Actual date of submittal: N/A Date when comments received: N/A
TM #4	
TM Title	Contaminants of Concern
TM Status	When preparation concluded or estimated to be concluded: 10/18/93 Projected date of submittal to EPA/CDH: 10/18/93 Actual date of submittal: N/A Date when comments received: N/A

Planned Work for September

- Review comments from the regulatory agencies on TM #2, *Exposure Scenario for the HHRA.*
- Send offsite landowners a letter notifying them of sample results.
- Continue work on RI Report.
- Continue work on the subcontract for weed control on Jefferson County Settlement Agreement property.

Problems

A stop work order on portions of the baseline HHRA was received July 23, 1993. All downstream milestones associated with the baseline HHRA will be delayed.

Open Items

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports.

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is comprised of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and ground water was detected. Interceptor trenches were installed in 1971 to collect and recycle contaminated ground water to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were replaced by the current, larger interceptor trench system (ITS), which returned approximately 4 million gallons of ground water back into the solar evaporation ponds each year.

No additional process water has been pumped into the ponds since 1986. However, the ITS collected and returned ground water into the solar evaporation ponds until new storage tanks were completed and placed in operation in April 1993. The tanks allowed termination of placement of contaminated ground water into the ponds. This placement of water into the ponds had been occurring without meeting Land Disposal Restrictions and Minimum Technology Requirements of RCRA. A new, dedicated Building 910 evaporation-treatment facility became operational in July 1993. This building will process the water stored in the modular tanks.

The Solar Evaporation Ponds Project is comprised of four subprojects: (1) pond sludge processing by means of the Agreement in Principle between DOE and CDH; (2) a water management/treatment by means of the interim Measure/Interim Remedial Action (IM/IRA) Decision Document signed by EPA, CDH and DOE; (3) the OU 4 assessment and remedial action by means of the IAG, which identified the ponds as one of the sixteen operable units (OUs) to be remediated at the Rocky Flats Plant and incorporated the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations and storage activities that are necessary to meet the plant's RCRA interim status and permit requirements with regards to storage of pond wastes. The water management and pond sludge clean-out are necessary precursors to OU 4 assessment and remediation, and pad operations are necessary support activities at least until the pond sludge waste is disposed.

These four subprojects were planned to close the ponds and remediate the ponds area. In chronological sequence, the project was scoped to (1) remove water from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related contaminated ground water, (3) remove and dispose of pond sludge in compliance with all regulations such as the Land Disposal Restrictions of RCRA, (4) assess the nature and extent of contamination at the ponds, (5) complete a RCRA closure of the impoundments, and (6) remediate the ponds as needed.

The April 1992 IM/IRA was developed as a regulatory agency requirement that was out of scope from the tasks outlined in the IAG. DOE attempted to modify an existing permit for water removal and treatment for liquids in the solar ponds and ground water collected by the ITS, but the regulatory agencies rejected permit modification and required development of an IM/IRA to document operation and use of the proposed water treatment system and provide the permitting mechanism for the system. The development and implementation of this IM/IRA precedes and overlaps the IAG scheduled Phase I RFI/RI field work.

The RCRA/CERCLA investigation Phase I field work began in FY93 and will continue through construct of the final corrective/remedial action. The technical scope to be performed by means of the IAG is funded through the OU 4 Assessment and Remediation area, with the other areas funded to provide necessary precursor and support activities to allow that IAG scope to be completed. There is an IM/IRA scheduled in the IAG that will be completed after results are collected and analyzed from the Phase I RFI/RI field work. The first draft of the IAG IM/IRA is scheduled for delivery in April 1994.

2.4.1 OU 4 ASSESSMENT

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 90

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	21 May 93	14 Sep 93	15 Apr 94*
Submit Final Phase I RFI/RI Report	18 Oct 93	14 Feb 94	16 Sep 94*
Submit Draft Phase II RFI/RI Work Plan	22 Apr 94		22 Apr 94
Submit Final Phase II RFI/RI Work Plan	19 Sep 94		19 Sep 94

*TBD because of HHRA issues work stoppage.

August Work Activity Status

A draft Streamlined IM/IRA schedule continues to be developed in support of the dispute resolution on the OU 4 Phase I RFI/RI Reports.

The regulatory agencies agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.
2. Selection of the contaminants of concern for both ecological and baseline HHRA.
3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports. Work stopped for OU 4 as of August 12, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological affects assessment will proceed as scheduled.

Data evaluation and report writing continues on schedule for the OU 4 Phase I RFI/RI Program. Approximately 97 percent of the data is in for all analytes except the metals, and approximately 63 percent of the data is in for the metals for the samples taken to date.

Core logging activities continue for the OU 4 Phase I RFI/RI Program. Of the 53 core logs, 37 were completed and approved. The remaining 16 were processed and submitted for approval on August 27, 1993.

Work continues on a Technical Evaluation of the OU 4 IM/IRA proposal to determine operational requirements, estimate assumptions, basis of estimates, resource loaded logic network, goals and objectives, and deliverables (external and internal).

Implementation of the TM #1, *Vadose Zone Monitoring*, continues in the form of lysimeter sampling and neutron monitoring until September 30, 1993. Bi-weekly water level measurements continue on all Phase I piezometers, piezometer groups, and selected RCRA monitoring wells within OU 4.

The Draft and Final TM #8, *Horizontal Drilling*, were reviewed by EG&G and comments were incorporated.

Technical Memoranda

Project	OU 4 - Solar Evaporation Ponds
TM #1	
TM Title:	Vadose Zone Investigation
TM Status:	Draft submitted to EPA/CDH: 11/16/92 Comments received: 11/30/92 Conditional Approval: 11/30/92 Projected submittal of Final to EPA/CDH: 12/15/92 Actual submittal date of Final: 12/15/92 Submittal of TM #1 Vadose Zone Schedule: 05/19/93 EPA/CDH Final Approval of TM #1: 06/17/93

TM #2	
TM Title	Modifications to Field Activities
TM Status	Draft submitted to EPA/CDH: 03/18/93 Comments received: 05/07/93 Projected submittal of Final to EPA/CDH: 06/07/93 Actual submittal date of Final: 06/09/93 EPA/CDH Final Approval of TM #2: 06/30/93
TM #3	
TM Title	Environmental Evaluation
TM Status	Draft submitted to EPA/CDH: 03/19/93 Comments received: EPA 04/21/93 CDH: 06/02/93 Projected submittal of Final to EPA/CDH: 04/30/93 Actual submittal date of Final: 07/02/93 EPA/CDH Final Approval of TM #3: 07/30/93
TM #4	
TM Title	Human Health Risk Assessment Exposure Scenarios
TM Status	Draft submitted to EPA/CDH: 0 3/19/93 Comments received: EPA 04/21/93 CDH 04/23/93 Projected submittal of Final to EPA/CDH: 06/11/93 Actual submittal date of Final: 06/11/93 EPA/CDH Final Approval of TM #4: 06/25/93
TM #5	
TM Title	Human Health Assessment Exposure Models
TM Status	Projected submittal of Draft to EPA/CDH: 08/01/93 Actual submittal of Draft: 06/24/93 Projected submittal of Final to EPA/CDH: 10/15/93
TM #6	
TM Title	Contaminants of Concern
TM Status	Projected submittal of Draft to EPA/CDH: 11/09/93 Projected submittal of Final to EPA/CDH: 12/22/93 Received stop work order: 08/24/93
TM #7	
TM Title	Toxicity Assessment
TM Status	Projected submittal of Draft to EPA/CDH: 11/04/93 Projected submittal of Final to EPA/CDH: 12/22/93 Received stop work order: 08/24/93
TM #8	
TM Title	Horizontal Drilling
TM Status	Projected submittal of Draft to EPA/CHD: Projected submittal of Final to EPA/CDH:

Planned Work for September

- Complete the vadose zone monitoring in the form of lysimeter sampling and neutron monitoring for the Phase I RI.
- Mobilize and begin drilling in Ponds 207B Center and North.

- Continue data evaluation and report development for the OU 4 Phase I RFI/RI Report.

Problems

A stop work order on portions of the baseline HHRA was received August 12, 1993. All downstream milestones associated with the baseline HHRA will be delayed.

Open Items

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports.

2.4.2 OU 4 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

None. The first IAG remediation milestone for this OU is the Draft Phase I Proposed IM/IRA Decision Document scheduled for April 14, 1994.

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94		14 Apr 94
Submit Final Phase I Proposed IM/IRA Decision Document	12 Sep 94		12 Sep 94

August Work Activity Status

Regulatory - Documentation is being revised for the Federal Facilities Compliance Agreement III (FFCA). Much of the Solar Ponds information in previous versions of the documentation is out of date, so considerable editing is necessary. The FFCA and supporting documents will be revised based on the current baseline for the Solar Ponds program. When the current dispute-resolution negotiations with the regulators are completed, the program baseline will be revised and subsequent changes to the FFCA documents can then be made as appropriate to the FFCA program schedule.

One of the documents prepared for the Building 910 waste treatment operation was a Quality Assurance Addendum (QAA). DOE received conditional approval of the QAA from the CDH. This approval was conditional based on the CDH estimation that a Prevention of Significant Deterioration Permit for air emissions would be preferable to the air permit that was obtained and described in the QAA. CDH's conditional approval is adequate to support the building operations, and the limitations imposed in the air permit will not prevent Building 910 from accomplishing its mission.

DOE requested that EG&G prepare an annual report on the status of mitigation measures included in National Environmental Policy Act (NEPA) documents; EG&G is beginning to draft the report for FY93. Of the 66 individual mitigation commitments included in the Solar Ponds Environmental Assessment for preclosure activities, 27 remained open in FY93. Nineteen of these open commitments were expected to be closed based on the completion of start-up activities. The remaining group of eight commitments are related to management of the empty impoundments and will be addressed with other closure issues. Current plans for completion will be documented in the annual report.

Pondsludge Status and Issues - The draft of the streamlined IM/IRA closure schedule for the accelerated pond sludge removal schedule was developed in support of the dispute resolution on the OU 4 Phase I RFI/RI Reports and was issued for review to all members of the project team. Accelerating closure of the ponds, getting sludge out of the ponds, and safely storing the sludge in containers are issues being addressed in this draft.

Preparation of the Design Criteria Package for accelerated pond sludge removal continued. The process flow diagrams (PFDs) for sludge pumping were finalized. Comments were incorporated into the design specifications of the polyethylene tanks to be used for sludge storage, and a draft purchase specification was issued. Preliminary layout studies of how the containers would be placed in Tents 3, 4, and 6 were developed. Twelve-foot-diameter and fourteen-foot-diameter tanks are still being evaluated for the best layout. The first formal draft of the overall project schedule was issued. The schedule was reviewed with the various plant groups that would be involved in its execution. The project remains on schedule for finalizing the cleanout plan by September 7, 1993. The reviewed and cost-estimated schedule was included in the Draft Design Criteria Package issued on August 27, 1993.

Building 788 is located between Solar Pond 207C and 207A and while the building would be demolished under any scenario, the timing needs to be accelerated to support the accelerated pond closure schedule. Although there is no funding for the

B788 effort, some preliminary planning can proceed as part of the funded study of accelerating pond closure. An environmental checklist, the first step in the NEPA process, was drafted for demolishing the building.

Water Management - Building 374 processed 652,075 gallons of water from all sources during July 1993. This month this figure is down to about half of the building's normal rate because of downtime for repair and problems with the tubes plugging with sludge. This is a continuing problem and may require the cleaning of the 231 B tank as part of the final solution. Pumping will no longer be necessary once the excess water has been removed from the ponds.

The Building 910 evaporators did not operate in early August 1993 because of the ruptured feed line and inadequate storage capacity. The repair of this line was completed August 17, 1993. The break in the primary line was at a weld approximately half way between pump houses 308 B and 308 A. The primary and secondary lines were tested successfully. All alarm systems' functions, except the center tank high-level alarm, were successfully tested and are now in operation.

The laboratory has begun sampling and analysis in support of Building 910 operations. A final revision of the sampling and analysis program document is being prepared based on the experience gained by the laboratories' staff in the initial sampling event. EG&G Waste Operations will manage routine implementation of the sampling with the laboratories. This analytical data will be stored for future use in the Rocky Flats Environmental Database System (RFEDS) per plant procedure to demonstrate compliance with the Building 910 IM/IRA.

The 207 B North pond was empty of sludge on July 30, 1993. Water from 207 B South was pumped to the north pond so that a more accurate assessment of the total sludge volume could be made. This assessment was completed on August 11, 1993, with a best estimate of 900 to 1,050 cubic yards. Water was then pumped back to 207 B south. The final rinsing of 207 B north started August 16, 1993, and was completed August 25, 1993. The pond was then turned over to Rocky Flats Radiological Operations Department for surveying.

Pad Operations and Storage - The Pad Sealing Project was completed August 6, 1993; the 750 Pad was completed August 23, 1993; and 904 Pad was completed August 30, 1993.

Work that was not included in the original scope is being included in storage pad improvements. This work is not part of the Pad Sealing Project and will be managed separately. This work includes raising the grade of a small portion of the 750 Pad in the southwest corner, repairing the berm on the 904 Pad, and other activities.

Funds were saved by revising the scope of removals at Tent 10. It has been decided to leave the permacon structure in place to support repackaging work. This building will provide a facility outside the Protected Area (PA) in which radiological contaminated waste containers can be opened and repackaged, as required.

Planned Work for September

- Complete dispute resolution negotiations regarding RFI/RI Report and Closure acceleration.
- Continue routine operation of pads and Building 910.

Problems

Building 374 is processing half of the building's normal rate of water because of downtime for repairs and problems with the tubes plugging with sludge. This is a continuing problem and may require the cleaning of the 231 B tank as part of the final solution.

Open Items

Milestone Schedule for the Solar Evaporation Ponds Water Management IM/IRA:

	Original Date	Revised Date	Status
Begin Construction of Treatment and Storage System	01 Mar 92	06 Apr 92	Complete
Complete Construction of Treatment and Storage System	01 Jun 92	07 Jul 93	Complete
Conduct Trial Run of Treatment System	08 Jun 92	28 Jun 93	Complete
Building 910 Evaporators Fully Functional	15 Jun 92	09 Sep 93	Complete
Diversion of ITS Water	16 Apr 93	08 Apr 93	Complete

2.5 OU 5 - WOMAN CREEK

This activity encompasses assessment and remediation of 10 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881. Two additional surface disturbances have been identified and are located, one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. Possible contamination in this operable unit was caused by landfill operations, storm-water runoff into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, plutonium, uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Media affected include soils, sediments, surface water, ground water, and air resuspension.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
Submit Final Phase I RFI/RI Work Plan	30 Aug 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	30 Nov 93		09 Feb 95*
Submit Final Phase I RFI/RI Report	18 Oct 93		18 Oct 95*

*TBD because of HHRA issues work stoppage.

August Work Activity Status

The aquifer testing was completed by August 31, 1993. This is the last of the scheduled field work at OU 5 for the Phase I RFI/RI, except for routine water well and well point monitoring.

Draft TM #12, *Exposure Scenarios*, is at the regulatory agencies for review.

Draft TM #13, *Modeling*, is in review at DOE.

A meeting with the regulatory agencies and DOE was held on August 30, 1993. A presentation was given to discuss recently completed field activities, justification for milestone extensions, and an overview of the proposed Phase II activities.

The regulatory agencies agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.

2. Selection of the contaminants of concern for both ecological and baseline HHRA.

3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports. Work stopped for OU 5 as of August 12, 1993. The effect of the work stoppage is minimal for OU 5 because the aggregation of data and selection of COCs have not yet begun. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological affects assessment will proceed as scheduled.

Technical Memoranda

Project	OU 5 - Woman Creek Priority Drainage
TM #1	
TM Title	Surface Water and Sediments
TM Status	When preparation concluded or estimated to be concluded: 11/30/92 Projected date of submittal to EPA/CDH: 11/30/92 Actual date of submittal: 10/13/92
TM #2	
TM Title	Surface Geophysics
TM Status	When preparation concluded or estimated to be concluded: 11/30/92 Projected date of submittal to EPA/CDH: 11/30/92 Actual date of submittal: 10/13/92
TM #3	
TM Title	Soil Sampling at IHSS 115
TM Status	When preparation concluded or estimated to be concluded: 05/7/93 Projected date of submittal to EPA/CDH: 05/7/93 Actual date of submittal: 01/26/93

TM #4	
TM Title	Soil Sampling at IHSS 133
TM Status	When preparation concluded or estimated to be concluded: 06/7/93 Projected date of submittal to EPA/CDH: 06/7/93 Actual date of submittal: 04/12/93
TM #5	
TM Title	Soil Gas Sampling at IHSS 115
TM Status	When preparation concluded or estimated to be concluded: 05/7/93 Projected date of submittal to EPA/CDH: 05/7/93 Actual date of submittal: 03/25/93
TM #6	
TM Title	Cone Penetrometer at IHSS 115
TM Status	When preparation concluded or estimated to be concluded: 04/14/93 Projected date of submittal to EPA/CDH: 04/14/93 Actual date of submittal: 03/25/93
TM #7	
TM Title	Soil Borings at IHSS 133
TM Status	When preparation concluded or estimated to be concluded: 05/07/93 Projected date of submittal to EPA/CDH: 05/07/93 Actual date of submittal: 02/19/93
TM #8	
TM Title	Monitoring Wells at IHSS 115
TM Status	TM 8 has been canceled and is being replaced by a letter outlining the justification behind the location of the three wells in IHSS 115
TM #9	
TM Title	Monitoring Wells at IHSS 133, Ash Pits, Incinerator and Concrete Wash Pad
TM Status	When preparation concluded or estimated to be concluded: 05/14/93 Projected date of submittal to EPA/CDH: 05/06/93 Actual date of submittal: 05/06/93 EPA/CDH comments scheduled: 06/11/93 Actual date of submittal: 06/28/93
TM #10	
TM Title	Soil Borings at IHSS 209
TM Status	When preparation concluded or estimated to be concluded: 03/06/93 Projected date of submittal to EPA/CDH: 03/06/93 Actual date of submittal: 03/06/93

TM #11
TM Title — Contaminants of Concern
TM Status — To be scheduled in FY94.

TM #12
TM Title — Exposure Scenarios
TM Status — When preparation concluded or estimated to be concluded: 07/30/93
Projected date of submittal to EPA/CDH: 08/15/93
Actual date of submittal: 07/07/93

TM #13
TM Title — Modeling
TM Status — When preparation concluded or estimated to be concluded: 07/28/93
Projected date of submittal to EPA/CDH: 08/24/93
Actual date of submittal:

TM #14
TM Title — Toxicity Assessment
TM Status — To be scheduled in FY94.

Planned Work for September

- Respond to the comments from the regulatory agencies on Draft TM #12, *Exposure Scenarios*, and resubmit final TM to the regulatory agencies.
- Deliver Draft TM #13, *Modeling*, to the regulatory agencies.

Problems

None

Open Items

None

2.6 OU 6 - WALNUT CREEK

This activity encompasses assessment and remediation in the Walnut Creek Drainage of 21 IHSS: A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North, Pond, and South Area Spray Fields (IHSS 167.1, 167.2 and 167.3); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSS 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143). and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in obtaining the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, stream water, pond water, and ground water.

Eleven new ground water monitoring wells, installed in OU 6 to supplement four existing wells, are being sampled each quarter for a minimum of 1 year. Geophysical surveys and radiation surveys were performed in selected areas to supplement the sampling activities.

The regulatory agencies have proposed a new IM/IRA on the operation of the RFP Ponds. If approved, this IM/IRA would affect the RFP ponds, including OU 6, placing them under CERCLA rather than the National Pollution Discharge Elimination System (NPDES).

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
Submit Final Phase I RFI/RI Work Plan	16 Sep 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	04 Aug 93		21 Oct 94*
Submit Final Phase I RFI/RI Report	07 Jan 94		10 Jul 95*

*TBD because of HHRA issues work stoppage.

August Work Activity Status

EPA approved a 10-month extension of the OU 6 Draft Phase I RFI/RI Report from August 4, 1993, to June 10, 1994, and the Final Phase I RFI/RI Report from January 7, 1994, to November 18, 1994. EPA approval was received on August 16, 1993. DOE approval of EPA's extension is pending.

TM # 3, *Modeling Surface and Ground Water*, was submitted to the regulatory agencies on August 4, 1993. Comments from the

regulatory agencies on TM #3 are due on September 1, 1993. EPA has informed DOE that comments would be late on TM #2, *Exposure Scenarios.*

Work continues on the RFEDS database tables to sort the data by Individual Hazardous Substance Sites (IHSSs) and contaminants and perform Quality Assurance (QA). Data comparisons will be made against the Background Geochemical Report and upper tolerance limits (UTLs) to determine the possibility of removing some of the IHSSs from the remainder of the RI/FS process.

The regulatory agencies agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.

2. Selection of the contaminants of concern for both ecological and baseline HHRA.

3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports. Work stopped for OU 6 as of August 12, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological affects assessment will proceed as scheduled.

Technical Memoranda

Project	OU 6 - Walnut Creek
TM #1	
TM Title	Work Plan Modifications
TM Status	Approved by EPA: 01/08/93
TM #2	
TM Title	Exposure Scenarios
TM Status	When preparation concluded or estimated to be concluded: 07/01/93 Projected date of submittal to EPA/CDH: 07/01/93 Actual date of submittal: 07/01/93 Date when comments received: N/A

TM #3	
TM Title	Modeling Surface and Ground Water
TM Status	When preparation concluded or estimated to be concluded: 07/01/93 Projected date of submittal to EPA/CDH: 07/08/93 Actual date of submittal: 07/08/93 Date when comments received: N/A
TM #4	
TM Title	Contaminants of Concern
TM Status	When preparation concluded or estimated to be concluded: 09/15/93 Projected date of submittal to EPA/CDH: TBD Actual date of submittal: N/A Date when comments received: N/A
TM #5	
TM Title	Toxicity Factors
TM Status	When preparation concluded or estimated to be concluded: 09/15/93 Projected date of submittal to EPA/CDH: TBD Actual date of submittal: N/A Date when comments received: N/A

Planned Work for September

- Continue work on the RFEDS database tables to sort the data by IHSSs and contaminants and perform QA.
- Continue work to finalize extension dates for the Draft Phase I RFI/RI Report and the Final Phase I RFI/RI Report.
- Continue HHRA negotiations with the regulatory agencies.

Problems

A stop work order on portions of the baseline HHRA was received August 12, 1993. All downstream milestones associated with the baseline HHRA will be delayed.

Open Items

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports.

CDH approved a 10-month extension of the milestone request. DOE approval of the 10-month extension is pending.

2.7 OU 7 - PRESENT LANDFILL

The Present Landfill - OU 7 is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August of 1968 and was originally constructed to provide for disposal of RFP's nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	12 Oct 93		20 Dec 93*
Submit Final Phase I RFI/RI Report	16 Mar 94		02 Sep 94*
Submit Draft Phase II RFI/RI Work Plan	13 Sep 94		07 Aug 95

*TBD because of HHRA issues work stoppage.

August Work Activity Status

The regulatory agencies agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.
2. Selection of the contaminants of concern for both ecological and baseline HHRA.
3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports. Work stopped for OU 7 as of June 21, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological affects assessment will proceed as scheduled.

Schedule acceleration through project streamlining has been proposed to CDH. EPA would have to approve this proposal before any changes to the schedule would be made. Written guidance is forthcoming.

Technical Memoranda

Project	OU 7 - Present Landfill
TM #1	
Title	Exposure Scenarios
Status:	Initial reviews completed by DOE/HQ and RFO. Review completed by EPA and CDH. Response summary developed and submitted to all parties for review. Reviews complete. Revised response summary completed May 25, 1993, with a final review underway prior to transmittal to the agencies.
TM #2	
Title	Model Description
Status:	Transmitted to EPA and CDH for review: 01/08/93 Initial review by EPA, CDH, and DOE: 04/30/93 Draft response summary complete: 05/25/93
TM #3	
Title	Addendum to Final Phase I RFI/RI Work Plan. Surface Soil and Asbestos Pit Disposal Area Characterization Plan.
Status	Transmitted to DOE for review: 02/05/93 Transmitted to EPH and CDH for review: 02/08/93 Comments received: 04/26/93 Conditional approval by EPA and CDH received: 02/22/93 Clarification of outstanding comments from EPA and CDH received: 05/03/93
TM #4	
Title	Contaminants of Concern
Status:	Under development

Planned Work for September

- Continue work to rescope the OU 7 IAG schedule with the regulatory agencies.

Problems

A stop work order on portions of the baseline HHRA was received June 21, 1993. All downstream milestones associated with the baseline HHRA will be delayed.

Open Items

Work has stopped until parties to the IAG can agree on guidance for (1) methodology for the baseline risk assessment and (2) preparation of the RFI/RI Reports.

2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Plant. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings which potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases through precipitation runoff. The chemical composition of the contaminants also varies widely between the IHSSs, ranging from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	01 May 92
Submit Final Phase I RFI/RI Work Plan	01 Dec 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	14 Feb 94		02 Nov 15
Submit Final Phase I RFI/RI Report	12 Jul 94		19 Jul 16

August Work Activity Status

DOE comments are being incorporated into the final HSP for implementation of nonintrusive field work for the Industrial Area (IA) OUs 8, 9, 10, 12, 13, and 14. All comments will be incorporated into the plan by October 1, 1993, and DOE will review the plan for approval.

The comment responsiveness summary and inserts for the Final Phase I RFI/RI Work Plan for OU 8 were delivered to the regulatory agencies on August 17, 1993. The inserts resulted from comments made by CDH during a comment resolution meeting.

A kick-off meeting was held with the implementing subcontractor for the field work in the IA on August 4, 1993, and a follow-up meeting on August 26, 1993. Field work is scheduled to begin on September 26, 1993, pending resolution of DOE comments on the HSP by September 10, 1993.

Technical Memoranda

None

Planned Work for September	• Continue work on final HSP for implementation of nonintrusive field work. • Begin field work for the IA OUs on September 26, 1993; starting with OU 10 in the Property Utilization and Disposal (PU&D) yard.
Problems	None
Open Items	None

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This activity involves characterizing a series of tanks and associated process waste lines. The original Process Waste Lines (OPWL) consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe section, 46 storage tank sites, and 3 other areas of suspected press waste leakage are included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced over the 1975-1983 period by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI plan includes inspection and sampling of the OPWL tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 200-foot intervals along the pipelines, and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the RFI/RI will determine the need for interim and/or final remediation action.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	11 Apr 94		04 Jan 01
Submit Final Phase I RFI/RI Report	06 Sep 94		16 Sep 03

August Work Activity Status

Site walk portions of data compilation continued this month. This includes visiting each tank site to prepare a sketch map and indicate specific locations to take soil samples, residue samples, etc. Tanks in the 100 Area, north of 771, and east of 774, and tanks in the 500 area were visited. Tanks in the 700 Area and all of the outside tanks were completed. This data compilation will form the basis for TM #1, *Field Sampling Plan*, Part 1 Tanks. Within TM #1, Part 1, for each tank site, the following will be reconciled: Work Plan, Work Plan

Appendices, IAG Table 5, Historical Release Report (HRR), and Site Walk Results. Also, what will be proposed at this site, what samples will be collected where, and what analytes will be run.

EG&G is meeting with groups at RFP who manage tanks and have proposed a Process Management Team (PMT) on tanks.

Approval is being accelerated on the soil samples to be taken around the exterior tanks in an effort to collect and ship these samples to the laboratories in FY93.

On August 20, 1993, DOE and the regulatory agencies took a tour of the outside tank sites in OU 9. The proposed FSP was presented and comments were received.

Technical Memoranda

Project	OU 9 - Original Process Waste Lines
TM #1	
TM Title	Stage 1 Field Sampling Plan
TM Status	When preparation concluded or estimated to be concluded: 09/93 Projected date of submittal to EPA/CDH: 09/93 Actual date of submittal: N/A Date when comments received: N/A

Planned Work for September

- Continue site walk portions of data compilation to prepare tank portion of TM #1, *Sampling Plan*.
- Compile data on locations of buried pipelines from archive copies of plant engineering and as-built drawings.
- Draft letter requesting extensions to the OU 9 IAG milestones; submit the letter to the regulatory agencies.

Problems

None

Open Items

None

2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is made up of 15 IHSSs scattered throughout the plant, which consist of various hazardous waste units. Six of the IHSSs are located in the Protected Area (PA), two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the plant. The types of wastes identified at these sites range from pondcrete/ saltcrete storage and drum storage to a utilization yard with waste spills. A Final Phase I RFI/RI Work Plan is currently in preparation. The primary components of the RFI/RI Work Plan for OU 10 will be an FSP, Baseline Risk Assessment Plan (BRAP), and an EE Work Plan.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
Submit Final Phase I RFI/RI Work Plan	01 May 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	25 Aug 94		02 Nov 15

August Work Activity Status

A site walk of OU 10 IHSSs was conducted August 20, 1993. The site walk was to discuss specific sampling location points and other logistical concerns regarding implementation of field activities. Field crews began collecting surficial soil samples at OU 10 beginning the week of August 30, 1993.

All Stage I High Purity Germanium (HPGe) survey data, outside of the PA, have been collected for OUs 10, 12, 13, and 14. The portions of OU 8 outside the PA have also been surveyed. The survey data is currently being analyzed and should be completed by the end of September 1993. Results from this data evaluation will provide direction for future HPGe and Sodium Iodide survey points, if needed.

The subcontract to fully implement the SOW for the IA OU was awarded on August 16, 1993. The first task to be performed under the IA OU project was to collect surficial soil samples in IHSS 170, the PU&D yard. This activity will take approximately 2-3 weeks to complete. The logistics of collecting and shipping the samples will be worked out as the work is performed.

Additional funds have been allocated to the IA OUs for FY94. A portion of these funds could be directed for waste removal for the beginning of FY94.

Technical Memoranda

No TMs have been developed for OU 10. The first TM for OU 10 will be for the nonintrusive field work, tentatively scheduled to be completed in March 1994.

Planned Work for September

- Begin surficial soil sampling.

Problems

Remaining waste and salvage items around IHSSs 170/174 and 176 may impact Phase I activities for OU 10.

Open Items

None

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats Plant buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated ground water in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and ground water.

Scope Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	02 Jan 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	20 Sep 94		18 Apr 95

August Work Activity Status

The draft revised FSP is still under development. The scope of the work is still being finalized.

Schedule acceleration through project streamlining has been proposed to CDH and is under development for OU 11. It appears that some degree of vadose zone monitoring would be beneficial to support the investigation. Other techniques being scoped out include some degree of soil borings, surficial soil sampling, and ground water sampling. Exact numbers are yet to be determined. A draft has been completed and is now being reviewed and evaluated. EPA would have to approve this proposal before any changes to the schedule would be made. Written guidance is forthcoming.

Work to rescope and perform the Environmental Evaluation (EE) for the West Spray Field is in progress. A draft proposal was completed on August 20, 1993.

A meeting was held on August 16, 1993, with the subcontractor concerning its proposal for the OU 11 rescoping of the FSP. The proposal incorporated information from previous surface soils and present ground water monitoring studies.

Technical Memoranda

Project	**OU 11 - West Spray Field**
TM #1 TM Title TM Status	Revised Field Sampling Plan and Data Quality Objectives Under development. HHRA Technical Memoranda scheduled to begin in FY94
Planned Work for September	• Complete work on rescoping the OU 11 IAG schedule with the regulatory agencies based on the streamline proposal.
Problems	Submittal of Draft and Final Phase I RFI/RI Reports will require milestone extensions because of assessment activity delays.
Open Items	None

2.12 OU 12 - 400/800 AREA

The 400/800 Area involves assessment and remediation of the 10 IHSSs at the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - north, east , south, and west of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and a HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be an analyzed, and the Phase I RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision (ROD), release to the public, and implementation of the plan.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 May 92
Submit Final Phase I RFI/RI Work Plan	05 Oct 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	20 Apr 94		11 Mar 99
Submit Final Phase I RFI/RI Report	15 Sep 94		17 Nov 99

August Work Activity Status

All Stage I HPGe survey data, outside of the PA, have been collected for OUs 10, 12, 13, and 14. The portions of OU 8 outside the PA have also been surveyed. The survey data is currently being analyzed by EG&G and should be completed by the end of September 1993. Results from this data evaluation will provide direction for future HPGe and Sodium Iodide survey points, if needed.

The contract for the integrated OUs was awarded on August 13, 1993. The delay in awarding the contract has pushed the field work schedule by approximately 11 weeks. The implementation of the IA/OU field work is being expedited to try

and recover some of the delay. The total impact on FY93 and FY94 activities is being investigated.

The procurement package for implementation of the IA EE was submitted to EG&G Procurement on July 21, 1993. One EE will be conducted for the entire IA but will support the information required in the Phase I RFI/RI Work Plans for OUs 4, 8, 9, 10, 12, 13, and 14. The implementation will be conducted by using the OU 9 EE TM.

OU 12 requested a milestone extension for the Draft RFI/RI Report due on April 20, 1994, and the Final RFI/RI Report due on September 15, 1994. The extension is being requested because of field work activities being postponed as a result of funding limitations in FY93 and because of the coordination of IHSS clean up with the RFP Decontamination and Decommissioning (D&D)/Transition Planning, which was included in the FY95-99 Five-Year Plan (FYP) submittal that was approved by DOE.

Technical Memoranda

None

Planned Work for September

- Begin surficial soil sampling.

Problems

The delay in awarding the contract pushed the field work schedule by approximately 11 weeks. The implementation of the IA/OU field work is being expedited to try and recover some of the delay. The total impact on FY93 and FY94 activities is being investigated.

OU 12 requested a milestone extension for the Draft RFI/RI Report due on April 20, 1994, and the Final RFI/RI Report due on September 15, 1994.

Open Items

Request for Draft RFI/RI Report milestone extension is pending.

2.13 OU 13 - 100 AREA

Cleanup of the 100 Area involves the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will consist of preparing a Phase I RFI/RI Work plan, which will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	15 May 92
Submit Final Phase I RFI/ RI Work Plan	12 Oct 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	08 Aug 94		24 Mar 99

August Work Activity

DOE received the final revision of the OU 13 Final Phase I Work Plan on July 26, 1993. The CDH approved the OU 13 Work Plan this month, and a letter from EPA approving the Work Plan is forthcoming.

Comments from CDH were received on Draft SOPs for tank and pipeline inspections and asphalt and concrete sampling. Formal comments from the regulatory agencies were received by DOE on August 13, 1993.

HPGe activities in OU 13 were completed on August 9, 1993. The data acquisition is complete, but analysis of the data may need further evaluation.

A meeting to finalize soil sampling locations will be held with the regulatory agencies, DOE, and EG&G to finalize sampling locations.

A few logic links to an integrated schedule are still missing. These links will affect the OU 13 schedule. At a meeting on August 17, 1993, it was decided that the soil sampling scheduled for OU 13 will have to slip until FY94.

Work continues on resolution of comments on SOPs. A revised draft was completed on August 26, 1993.

Technical Memoranda

None

Planned Work for September

- Finalize sampling locations.
- Develop an action plan to get all SOPs issued as controlled documents.
- Respond to comments from the regulatory agencies on the Draft Compendium of in situ radiological methods and applications at RFP.
- Prepare extension request for OU 13 Draft Phase I RFI/RI Report due August 8, 1994.

Problems

A few logic links to an integrated schedule are still missing, causing the OU 13 soil sampling schedule to be delayed until FY94.

Several of the SOPs developed earlier this year and approved by the regulatory agencies were not released as controlled documents. An action plan to correct this problem is being developed.

Open Items

None

2.14 OU 14 - RADIOACTIVE SITES

Work at the "Radioactive Sites" involves the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and feasibility study of the project. This process includes review and approval by EPA and CDH, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan	26 Jun 92 19 Oct 92
Future IAG Milestones Through FY94	None	
August Work Activity Status	Surface radiological surveys utilizing the HPGe instruments were completed for IHSSs outside of the PA. The activities for FY94 continue to be entered into a software scheduling program, along with the logic ties, to facilitate the integration of activities with the other integrated OUs. The Preliminary Costs, Schedule, and Planning for the Shared Treatment & Storage Facilities Draft Report was reviewed and comments were made. DOE and EG&G reviewed the OU 14 HSP this month.	
Technical Memoranda	The current Five-Year Plan indicates that TM #1, *Human Health Risk Assessment-Exposure Assessment*, and TM #2, *Human Health Risk Assessment-Modeling*, are scheduled for completion in March 1994.	

These tasks will require rescheduling because of the integration of OUs 8, 9, 10, 12, 13, and 14. Currently, only nonintrusive RI field work is scheduled for OU 14 in FY94. Preparation of the TMs will not begin until FY95.

A nonintrusive TM will be prepared in FY94 summarizing the nonintrusive field work and recommending Stage II activities for the remedial investigation intrusive field work.

Planned Work for September

- Start radiological surveys inside the PA.
- Acquire approval of the HSP.
- Acquire approval of the OU 14 Work Plan.

Problems

None

Open Items

The OU 14 Final Phase I RFI/RI Work Plan is still pending approval.

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is composed of seven IHSSs: IHSS 178, Building 881 - Drum Storage Area; IHSS 179, Building 865 - Drum Storage Area; IHSS 180, Building 883 - Drum Storage Area; IHSS 204, RCRA Unit 45 - Original Uranium Chip Roaster; IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area; IHSS 212, RCRA Unit 63, Building 374 Drum Storage Area; and IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench Scale Treatment. The seven IHSSs currently have interim status under RCRA.

Closure Plans for the IHSSs were submitted to CDH during 1988 and 1989. The IHSSs were also included within the IAG to undergo a RCRA Facility Investigation/Remedial Investigation (RFI/RI). During scoping meetings for preparation of the Phase I RFI/RI Work Plan for Operable Unit No. 15 conducted between EPA, CDH and DOE during April 1992, the Closure Plan and RFI/RI Processes were combined. In affect, Clean Closure Performance Standard (6 CCR 1007-3, Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings and Closure Plans will no longer be prepared. The public comment period required for the Closure Plan process will be fulfilled through the IM/IRA process of the IAG.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants and solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes) and waste paints and waste metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. The major activity proposed is characterization of contamination associated with the OU 15 IHSSs both inside and outside buildings and, if applicable, decontamination of the concrete floors at the indoor facilities and remediation of contamination outside buildings.

During April 1992, IHSS 215, Unit 55.13-Tank T-40, was deleted from OU 15 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992. Similarly, IHSS 212, RCRA Unit 63 was removed from the OU 15 RFI/RI process since it is currently active as a Drum Storage Area and has been included in the Rocky Flats Plant RCRA Part B TRU Mixed Waste permit application.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
Submit Final Phase I RFI/RI Work Plan	26 Oct 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	01 Aug 94		01 Aug 94

August Work Activity Status

Floor/equipment hot water rinsate sampling and direct radiological surveys (Stages I and II of the OU 15 Work Plan) within Building 881 were completed. Coordination of initiation of OU 15 field work activities on August 15, 1993, with Buildings 883 and 865 began. Dedicated EG&G Rocky Flats Radiological Protection Technicians (RPTs) have been assigned to perform OU 15 work. Personal Protective Equipment (PPE) has been downgraded from anti-contamination (Anti-C) to modified Level D. This will allow field work to proceed on schedule and has allowed past delays during field work to be made up. Attempts will be made to continue making up OU 15 schedule slippage during field work.

It is estimated that submittal of OU 15 IAG milestone documents will exceed the IAG Table 6 dates by approximately 40 working days. Schedule slippage was estimated based on the assumption that the results of Stage III field work (outside buildings) will not be presented within the Draft Phase I RFI/RI Report for OU 15. EG&G has recommended to DOE that a new schedule for OU 15 be provided within OU 15 TM #1, *Field Sampling*, for regulatory agency review and approval. The new schedule could be based on a well-defined scope of work for Stage III field work (outside buildings) that will be available with TM #1 and based on the results of Stage I and Stage II field work (inside buildings). TM #1 is scheduled to be submitted to the regulatory agencies during FY94.

A potential conflict exists between OU 15 field work with Building 447 (i.e., the original uranium chip roaster, IHSS 204) and waste characterization work required by Nevada Test Site (NTS) because work for both areas are scheduled for initiation on September 6, 1993. To eliminate this conflict, the NTS work will be delayed until September 13, 1993, and increased OU 15 efficiency may expedite the OU 15 schedule to eliminate potential conflicts. Coordination of OU 15 and NTS work continues.

On August 16, 1993, DOE audited OU 15 field work at Building 881, Room 165, IHSS 178. A Building worker without the proper PPE walked through IHSS 178 while sampling was ongoing and the audits were taking place. It was noted that the area was not roped off/taped off because the RFP Fire Department would not allow blockage of a fire exit pathway. The worker was warned and asked to not go through the area while sampling was ongoing; however, the worker chose to continue through the IHSS. The issue of site control was addressed and resolved onsite. No negative ramifications/implications to OU 15 are anticipated as a result of this incident.

EPA and DOE toured OU 15 on August 26, 1993.

Technical Memoranda	Preparation of the Field Sampling Plan TM and the Human Health Risk Assessment TM is not anticipated to begin until FY94.
Planned Work for September	• Continue coordination of OU 15 and NTS work.
Problems	None
Open Items	None

2.16 OU 16 - LOW PRIORITY SITES

This assessment activity consists of preparing a "No Further Action Justification Document" for seven IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks (400 and 700 Areas), Nickel Carbonyl Disposal, Water Treatment Plant Backwash Pond, and Scrap Metal Sites. In addition, the draft document must be reviewed, comments resolved, and the draft finalized.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft No Further Action Justification (NFAJ) Document	04 Mar 92
Submit Final NFAJ Document	30 July 92
Submit Revised Final NFAJ Document	16 Oct 92

Future IAG Milestones Through FY94

None

August Work Activity Status

The OU 16 Draft Final Proposed Plan (PP) is at EPA for review and for EPA comments to be incorporated into the PP. After EPA has concluded work on the PP, DOE will review it.

Technical Memoranda

None

Planned Work for September

- Submit the final revision of the OU 16 PP to EPA; transmit PP to CDH to review.

Problems

The ADS and Five-Year Plan for OU 16 indicate no available funding for FY94 because the submittal of the NFAJ document was the final project task.

Open Items

The administrative ROD process will extend into FY94, a work package was drafted to reflect the scope of work and resources required to complete the planned activities.

2.17 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by the IAG and that apply to RFP environmental restoration activities in general. The activities include, but are not limited to, the HSP, a Sampling and Analysis Plan, a Plan for Prevention of Contaminant Dispersion, the Community Relations Plan, the Discharge Limits for Radionuclides Work Plan, Treatability Study deliverables, the Background Study Plan, Administrative Record, State Response (support for CDH oversight), Historical Release Report, Operations Management, Decontamination Facilities, Contractor yard support, ER Waste handling facilities, geologic characterization, hydrogeologic characterization, and ground water monitoring.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft Health and Safety Plan	15 Aug 90
Submit Draft Quality Assurance Project Plan	29 Aug 90
Submit Draft Standard Operating Procedures	29 Aug 90
Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan	01 Nov 90
Submit Final Health and Safety Plan	12 Nov 90
Submit Revised Background Study Report	21 Dec 90
Submit Final Community Relations Plan	22 Jan 91
Submit Final Quality Assurance Project Plan	01 Mar 91
Submit Final Standard Operating Procedures	01 Mar 91
Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
Submit Community Relations Plan Responsiveness Summary	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91
Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final PPCD and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for DLRP	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93

Future IAG Milestones Through FY94

None

August Work Activity Status

Sitewide Treatability Studies

Colloid Polishing Filter Method (CPFM) (Techtran) - This process uses a proprietary chemical complexing agent to remove heavy metals and/or radionuclide contaminants from waste water or ground water. The contaminants are removed from the water by precipitation and filtration. Ultimately, the contaminants are contained in a dried filter cake, and the treated water is returned to the environment. Results of preliminary tests carried out at RFP in 1991 were favorable. EPA's Risk Reduction Engineering Laboratory (Cincinnati) is interested in supporting a demonstration of this technology at RFP through its Superfund Innovative Technology Evaluation (SITE) program.

DOE issued guidance to EG&G that the EPA SITE project have highest priority in the sitewide treatability program. EPA agreed to fund the study; funds were diverted from other tasks in the sitewide work package to begin the necessary preparation work for the project. Several other tasks within the work package will be delayed until the SITE project is completed by September 30, 1993.

The use of an inflatable, temporary berm to be used in the project as a secondary containment device has been under discussion by the subcontractors. Use of an inflatable, temporary berm would eliminate 6-8 weeks of time (from the time necessary to begin field tests of the technology through the elimination of the engineering and procurement lead times required for a permanently constructed berm).

The existence of a NEPA categorical exclusion (CX) was investigated for the project under the sitewide treatability exclusion, DOE/CX031-92. However, this CX was specifically written for laboratory studies and will not apply to this project. As a result, actions were started to provide a separate CX for this project. An environmental checklist and Section D Determination were created and submitted to the Plant NEPA Compliance Committee (NCC). The committee voted to recommend a CX for this project and forwarded its recommendation to DOE on July 6, 1993. The NEPA documentation under went final DOE review and was approved August 19, 1993.

Samples from each of the temporary modular storage tanks were requested on July 13, 1993, to ensure that the tank contents would be appropriate for the proposed test work. Sampling was scheduled for July 20, 1993, with a 2-week sample analysis turnaround expected from the laboratory. Analytical results for the TOC showed that the three samples contained 6.1, 8.0, and 7.0 mg/L.

DOE requested approval for the EPA SITE demonstration from the regulatory agencies on June 24, 1993. EPA granted approval for the project on August 5, 1993; approval from CDH is still pending.

Approval of the HSP is pending final review. The revised Work Plan (Demonstration plan) was received on August 9, 1993. This plan is undergoing final review by the EPA Risk Reduction Engineering Lab (RREL).

A meeting was held with EG&G Sample Management Office (SMO) to discuss a pathway to send samples offsite for laboratory analysis. SMO offered to have project samples scanned and packaged for offsite shipment. The decision on the laboratory where samples will be sent is still being reviewed by EPA and EG&G.

The technology vendor visited the plantsite on July 21, 1993. The purpose of the visit was to review the site where the test work will take place and hold discussions with representatives of radiological engineering to consider ways to ensure that the equipment used in the test work will be capable of being decontaminated and transported offsite. Radiological engineering outlined the steps that are required to allow the equipment to be decontaminated properly and released offsite.

Annual Report - The Sitewide Treatability Studies Annual Report is an IAG milestone. The annual report includes a summary of the status of each of the sitewide projects, a literature review of new and emerging technologies, and a summary of other relevant environmental projects at RFP. The final report (FY92) was delivered to the regulatory agencies on March 8, 1993.

The technical review of the three contractor proposals for the preparation of the Annual Report was completed on July 29, 1993. The result of the technical review was that all three proposals were found to be inadequate. The problem with each of the proposals was that the proposal focused only on one of the technical requirements in the SOW, the technology review requirement, and did not address any of the other requirements for the Annual Report. A meeting was held among EG&G personnel to discuss the technical review evaluation and what to do to correct the problem. It was decided to put the proposal out for rebid and to add another area from the Master Task Subcontract (MTS) list as potential proposers. The technical review of the proposals for the preparation of the Annual Report was completed and sent to EG&G Procurement. Award to the subcontractor is anticipated by September 30, 1993.

Pu in Soils - Physical Separation (TRU/Clean) - The TRU/Clean process (physical separation) was identified in the Final Sitewide Treatability Plan for further test work and

evaluation to determine how effectively it might remove plutonium contamination from Rocky Flats' soils. Initially, this test work was planned to be a part of the Plutonium in Soils Integrated Demonstration (ID), but the ID was put on hold. Therefore, RFP has contracted with Lockheed Environmental Systems and Technologies Company to conduct testing of the TRU/Clean process with Rocky Flats' soils.

Phase II testing is continuing and should be completed by September 10, 1993, along with a preliminary report. Discussion with the Los Alamos Technology Office (LATO) was started, and a soil sample was sent from the Lockheed test material to LATO for additional testing. Time and costs were saved by not collecting and shipping a new soil sample. The additional tests that have been proposed to be carried out at Los Alamos National Laboratory (LANL) are magnetic separation and bio-reduction of the plutonium.

The Plutonium in Soils ID is planning to do some test work in the laboratory located in Reno, Nevada. On August 3, 1993, a discussion among EG&G and a Pu in Soils ID representative was held concerning the soil sample that the test work will require. Apparently, the test work will require about 4,000 pounds of material. During the discussion, the Pu in Soils ID representative was not able to address the following concerns: (1) QA requirements for the test work; (2) Plans for residual handling and disposal; and (3) Desired Pu activity in the soil for the test work. In addition, there was no indication of the current testing schedule or how the results of the test work will be reported.

Lockheed Plasma Melter - Lockheed Environmental has asked EG&G Rocky Flats to participate in a plasma melter demonstration project along with EG&G Idaho. The purpose of the project is to investigate the performance of plasma melting technology for the destruction of hazardous organic compounds in soils and to determine the characteristics of the vitreous waste form produced by the process. EG&G Rocky Flats will contribute plutonium-contaminated soil for bench scale testing.

Lockheed has experienced public relations problems that may prevent it from performing the plasma melter testing at the Las Vegas facility. The testing is scheduled at Argonne Laboratories West, Idaho, during November of 1993.

An EG&G representative visited the plasma melter facility operated by ReTech, in Ukiah, California, on August 9 through 14, 1993.

Community Relations - The ER Community Relations Plan is scheduled to be updated in December 1993. A questionnaire is being developed to send to 35 citizens who will compose a focus group to help revise the plan.

Editing of the Surface Water video has begun. The video will be shown at the next ER Quarterly Public Information meeting tentatively scheduled for September 28, 1993.

Work is ongoing for the ER exhibit for "ER93" to be held in Augusta, Georgia, in October 1993.

Administrative Record (AR) - DOE will transmit the Quarterly AR Index to the regulatory agencies. DOE has reached an agreement with the regulatory agencies that the regulators will receive annual updates to the indices in the future.

IA/IM/IRAP - Phase II Geologic Characterization Data Acquisition - The acquisition phase of the Deep Seismic Program was completed on August 24, 1993. The field tapes have been sent to the processor and preliminary data is expected in approximately 1 month. Currently a gravity and magnetics survey is being conducted along the western portion of the seismic line by the Colorado School of Mines. This survey will aid in the final structural interpretation. Data acquisition went very smoothly both on and off plantsite.

The SOW was completed, reviewed, and delivered to EG&G Procurement. The regulatory agencies have give approval to the scope and schedule.

Integrated Operable Units - OUs 8, 9, 10, 12, 13 and 14 - The subcontract for implementation of the nonintrusive field work for the IA OUs 8, 9, 10, 12, 13, 14 was awarded by EG&G Procurement on August 13, 1993.

The High Purity Germanium (HPGe) Unit completed work on OU 13, OU 14, and part of OU 8 in August 1993. Results of the HPGe surveys for OU 10, 12, 13, 14, and part of OU 8 are being compiled. The cost estimate to remove materials to support environmental investigation of the IA OU IHSSs was $1.2 million. These funds will be paid for out of the FY94 budgets. The cost estimate includes movement of materials off the IHSSs and subsequently moving the materials back onto the IHSS area following environmental investigations.

The final HSP for implementation of nonintrusive field work for the IA OUs is being modified to include radiological operating procedures. DOE will review the plan for approval after all comments are included in the plan.

Planned Work for September

- Continue work on the Sitewide Treatability Studies including the Colloid Polishing Filter Method (Techtran) associated with the SITE program.
- Continue updates to the Administrative Record.
- Continue Community Relations Activities.

- Continue development of the Surface Water IM/IRA.

Problems

None

Open Items

None

SECTION 3. ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and to obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

- Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.
- Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.
- Each surface water and sediment sample is analyzed for the following parameters:

CLP TCL VOA	Radionuclides
Metals CLP TAL & Non-TAL	Temperature
Field Parameters	TDS/TSS
Specific Conductivity	pH
Dissolved Oxygen (DO)	Nutrients
Major Anions	

- Additionally, sediment samples are analyzed for CLP Semi VOAs, CLP Pesticides/PCBs and Herbicides-619.

3.2 SOILS

- Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) is sampled annually.
- Each soil sample is analyzed for Pu and Am.

3.3 GROUND WATER

A total of 410 ground water stations, including alluvial wells, bedrock wells, and pre-1986 wells, are sampled quarterly. Approximately one-third of the wells are monitored monthly for water levels.

Each ground water sample is analyzed for CLP, TCL, VOAs, TAL, and metals, as well as for the following parameters:

Radiochemical Parameters	Inorganic Parameters	Field Parameters
Gross Alpha	Nitrate/Nitrite	DO
Gross Beta	Total Phosphorous	Specific Conductivity
Plutonium	Ortho-Phosphate	Temperature
Americium	Ammonia	Turbidity
Strontium	TDS	pH
Tritium	Fluorine	
Uranium	Sulfate	
Cesium	Carbonate	
	Bicarbonate	

Radiochemical Parameters	Inorganic Parameters	Field Parameters
	TSS	
	Total CLP Metals & additional metals	
	Dissolved CLP & additional metals	
	Cyanide	
	CLP Volatile Organic Compounds	

SECTION 4. CONTRACTOR/SUBCONTRACTOR IDENTIFICATION

Contractors and subcontractors being used on the RFP ER Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

OU	Project	Subcontractor	Sub-Subcontractor	Work Description	Start Date
1	Assessment	Ebasco	Dames & Moore	CMS/FS Report	Jan 92
1	Assessment	Dames & Moore		Public Health Evaluation	Apr 93
1	Assessment	Roy F. Weston		Revise RI Report, respond to agency comments	Feb 93
1	Assessment	S.M. Stoller		Environmental Evaluation	Apr 93
1	Remediation	Resource Tech. Group, Inc. (RTG)	CH2MHill/OMT	B-891 Treatment System Operations	
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Ebasco	S.M. Stoller	Environmental Evaluation	Feb 91
	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock), surficial soils	Mar 93
2	Remediation	Reidel (RFG in April)		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Remediation	HNUS	Halliburton Spec.	Process "C" and "A/B" Pond waste streams to a certifiable form of final disposition	Sep 91
4	Assessment	Applied Environment	Gerashby & Miller Wright Water, Stoller Doty & Associates	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Assessment	Dames & Moore	UE&C	Management consulting to implement DOE Order 4700.1 and 4700.5	Jan 93

OU	Project	Subcontractor	Sub-Subcontractor	Work Description	Start Date
5	Assessment	ASI	Dames & Moore Blackhawk GeoWalsh & Assoc. Layne Envir. Service Utility Mgmt. Service S.M. Stoller Adv. Terra Testing	Implementation of OU 5 Work Plan (excluding EE)	Jun 92
5	Assessment	S.M. Stoller		Implementation of EE section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Environmental	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Feb 90
6	Assessment	S.M. Stoller		EE	Sep 92
7	Assessment	S.M. Stoller	Walsh & Assoc.	OU 7 RFI/RI Work Plan including EE Plan and QA Addendum	Apr 90
15	Assessment	S.M. Stoller		OU 15 RFI/RI Work Plan	May 92
15	Assessment	ERM-Rocky Mtn.	G.S. Miller, Inc.	Implementation of the RFI/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	Jacobs Eng.		Well Abandonment and Replacement	Mar 93
SW	Geo. Char.	Colorado State University		Support M.S. thesis of Structural Geology, of Front Range Area Near RFP	Nov 91
SW	Geo. Char.	S.M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado School of Mines		Masters level training program in ES and Engineering	Aug 92 Dec 94
SW	Geo. Char.	Woodward-Clyde		Support for the SSWMS	Feb 93
SW	Geo. Char.	Colorado State University		Sequential Extraction	April 92
SW	Geo. Char.	University of Colorado		Soil Monitoring Vadose Zone	Jun 92
SW	Geo. Char.	S.M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde	SAIC/Wright Water		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for ground water, surface water, and sediment	Jul 90

OU	Project	Subcontractor	Sub-Subcontractor	Work Description	Start Date
SW	QA	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S.M. Stoller		Program Management Support	Oct 92
PM	QA Support	SAIC		Provide QA/QC support to ER Program	Nov 92

ACRONYMS

ADS	Activity Data Sheet
AIP	Agreement In Principle
ARAR	Applicable or Relevant and Appropriate Requirements
BAT	Best Available Technology
BCP	Baseline Change Proposal
BRAP	Baseline Risk Assessment Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHWA	Colorado Hazardous Waste Act
CMS	Corrective Measures Study
COC	Contaminant Of Concern
CPT	Cone Penetrometer Testing
CRP	Community Relations Plan
CSU	Colorado State University
D&D	Decontamination & Decommissioning
DCN	Document Change Notice
DLRP	Discharge Limits Radionuclides Plan
DOE	Department of Energy
DQO	Data Quality Objectives
E&WM	Environmental and Waste Management
EA	Environmental Assessment
EE	Environmental Evaluation
EM	Environmental Management
EPA	Environmental Protection Agency
ER	Environmental Restoration
ERA	Ecological Risk Assessment
FIDLER	Field Instrument for Detection of Low Energy Radiation
FS	Feasibility Study
FSP	Field Sampling Plan
FTU	Field Treatability Unit
FYP	Five-Year Plan
GAC	Granular Activated Carbon
GPR	Ground Penetrating Radar
H&S	Health and Safety
H&SP	Health and Safety Plan
HAP	Health Advisory Panel
HHRA	Human Health Risk Assessment
HPGe	High Purity Germanium
HRR	Historical Release Report
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
ITS	Interceptor Trench System
IWCP	Integrated Work Control Package
IX	Ion Exchange
LATO	Los Alamos Technology Office
LL	Low-level
LLMW	Low-level Mixed Waste

MTS	Master Task Subcontract
MSVEU	Mobile Soil Vapor Extraction Unit
NEPA	National Environmental Policy Act
NFAJ	No Further Action Justification
NTS	Nevada Test Site
O&M	Operations and Management
OPWL	Original Process Waste Line
OTD	Office of Technology Development
OU	Operable Unit
PA	Protected Area
ppb	Parts per billion
PCCB	Plant Change Control Board
PCP	Process Control Plan
PAC	Potential Area of Concern
PPCD	Plan for Prevention of Contaminant Dispersion
PPE	Personal Protective Equipment
PU&D	Property Utilization and Disposal
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QP	Quality Plan
RAGS	Risk Assessment Guidance for Superfund
RCA	Radiological Control Area
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System
RFI	RCRA Facilities Investigation
RFP	Rocky Flats Plant
RI	Remedial Investigation
ROD	Record of Decision
RPT	Radiological Protection Technician
SAR	Safety Analysis Report
SID	South Interceptor Ditch
SMO	Sample Management Office
SOP	Standard Operating Procedure
SOW	Statement of Work
SPPO	Solar Ponds Program Office
TCE	Trichloroethene
TDS	Total Dissolved Solids
TM	Technical Memorandum
TRG	Technical Review Group
TS	Treatability Study
TSS	Total Suspended Solids
UBC	Under Building Contaminations
USFWS	United States Fish and Wildlife Service
UV	Ultraviolet
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound
WBS	Work Breakdown Structure
WS	Waste Solidification